



Guide to Government Witnessing and Review of Post-Installation and Annual M&V Activities

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Introduction

This guide is intended to assist government agencies in witnessing baseline, post-installation, first-year, and annual measurement and verification (M&V) inspections and analyses and commissioning of installed ECMs by energy services companies (ESCOs) under an energy savings performance contract (ESPC). It recommends a process in which agencies designate individual(s) to observe these inspections, review the resulting M&V reports by the ESCO, and certify in writing that those reports are acceptable to the agency. This process should be recognized as simply one element in a comprehensive M&V strategy, for which extensive guidance is available from FEMP at

www.eere.energy.gov/femp/financing/superespcs_mvresources.html. It is fully consistent with and in fact can be implemented as simply an additional element in the procedures FEMP recommends for reviewing performance reports, in *Reviewing Post-Installation and Annual Reports for Federal ESPC Projects*, which is available at the same website.

In addition, in response to observations made in recent government oversight reports on ESPCs, which urge that performance be more closely linked to and payments under ESPCs, FEMP recommends the additional step of scheduling the completion of witnessed and signed M&V report reviews so that acceptance of performance reports (and any necessary dispute resolution, as specified in the ESPC) can precede approval of payments under an ESPC, and also be taken into account in the agency's next succeeding annual obligation of funds for payments for the ESPC.¹ The details of this scheduling of acceptance will necessarily differ from delivery order to delivery order, depending upon the frequency of payment agreed upon by the parties, different agencies' payment procedures and other factors. FEMP recommends simply that, in the preparation of a Delivery Order (DO) RFP and subsequent negotiation of a delivery order, an agency should consider how the performance cycle of the ESPC will coincide with its own payment cycle, and establish provisions that in its own judgment provide the best assurance that payment to the ESCO is justified by M&V reports that the agency has accepted.

Purpose: To facilitate conduct and understanding of M&V, and implement FAR, ESPC statute, regulation, and Super ESPC contract provisions

Witnessing is recommended primarily to (1) assure that both agency and ESCO communicate clearly and fully understand the measurement and verification of savings that justifies payments being made to the ESCO and (2) provide increased confidence for the agency that savings expected under the ESPC are being achieved. The intent is that active facilitation and observation of ESCO M&V activities by designated agency personnel will speed the process of ESCO conduct of M&V, and agency review of the resulting reports, as well as reduce the number and intensity of disputes about performance. It also recognizes (as does the *Reviewing Post-Installation and Annual Reports* guide) that many agencies may be limited in time and expertise to devote to this effort, and therefore suggests that a prioritized or graded approach may be considered.²

Appendix A describes a graded approach to oversight and review of M&V activities, outlining three possible levels of oversight: minimum requirements that should be applied to all projects, more rigorous recommended practices, and a third level of best practices that should be implemented where resources permit. The requirements for personnel involved in these varying

levels of oversight and review of M&V activities are also addressed. By providing three levels of rigor and differentiating between the qualifications of personnel needed, it is expected that Agencies will be able to apply resources efficiently to minimize the cost of oversight while providing adequate oversight.³

The purpose of the acceptance aspect of these guidelines is to assist Federal agencies that use ESPCs to meet the requirements [of the Federal Acquisition Regulations (FAR), the ESPC statute, and the Department of Energy (DOE) Super ESPC contract] that energy cost savings performance be enforced as a condition of payment to an Energy Service Company (ESCO). FAR provisions generally require agencies to verify in writing that applicable procurement terms and conditions have been met by a contractor prior to payment by the government. The ESPC statute, regulation, and Super ESPC contract specify that project payments to the ESCO be made solely from cost savings realized, and that the cost savings be determined through a methodology set forth in the M&V Plan contained in the Delivery Order. GAO and other oversight agencies have, as noted above, recommended more vigorous action be taken to link agency payments ESCOs to agency verification that savings are being achieved.

Recommended Pre-M&V Steps: Agency facilitation of M&V, and preparation for witnessing

1. Identify lead agency personnel and agency witness(es). This may be one person or more than one. The Delivery Order will specify the name of the agency's Contracting Officer's Representative (COR) and define that individual's responsibilities in witnessing and review. (See proposed language in Appendix D.) The COR may execute these responsibilities or may delegate them to another individual. If these responsibilities are delegated the COR should notify all parties in writing. Delegation may be to anyone the agency judges to be qualified to perform the work. As noted in Appendix A, DOE recommends that the person with lead responsibility for oversight M&V and acceptance be a Certified Energy Manager or have equivalent knowledge combined with at least five years of experience with energy efficiency projects. Given the wide range of technologies implemented, and the skills and experience that may be needed to review a particular project, it is possible that a single individual will not have all of the qualifications necessary to provide proper oversight and review.

One option available to agencies, if in-house personnel lack the available time or expertise, is to use third parties, including the DOE Project Facilitator (PF) and/or M&V Contractor. If either of the latter is used for witnessing, then the witnessing responsibilities should be added to the Agency-DOE Interagency Agreement (IAA) and appropriate reimbursement should be negotiated with DOE. It is recommended that the COR and witnesses complete training on FEMP M&V guidelines and procedures — at a minimum the half-day M&V training offered at FEMP's ESPC workshops.

2. Prior to installation of ECMs, witness measurements and review calculations, records (e.g., utility bills) and other elements of the baseline, to confirm their accuracy and to confirm that methods are consistent with the approved M&V plan.

3. Schedule ESCO M&V inspections at times that are not disruptive to agency mission and assure ESCO access to all equipment and all building spaces necessary to evaluate performance

of ECMs. To the extent possible, schedule for dates and times when ECMs experience actual operating conditions. It is important to note that these guidelines are premised upon the common practice of conducting M&V with an annual inspection. FEMP recognizes that M&V data collection takes other forms — periodically with O&M visits, ongoing data collection from an EMCS, or other. Those differences should be taken into account in applying these guidelines.

4. Coordinate visit(s) to occupied spaces with appropriate management within the agency, if such access is required to observe performance of ECMs and/or occupant behavior that may be relevant to ECM performance.
5. Assure the availability of operating and maintenance personnel that may have information relevant to assessment of ECMs.
6. Prior to M&V inspections, either prepare or ensure that the ESCO prepares forms for recording dates, personnel and measurement information for all ECMs to be witnessed. A sample form, with entries to be replicated for each selected ECM, is attached as Appendix B. These forms, when completed, are to be signed by the agency witness(es), confirming that the content of the forms accurately represents the measurements that have been witnessed. Copies of completed and signed forms shall be forwarded to the Agency CO, the FEMP PF and the ESCO, and copies shall be attached to the agency's review of the ESCO's Post-Installation, Commissioning and Annual M&V Reports.
7. Review and understand project documentation, including the contract, the installed ECMs and their anticipated performance and agreed-upon baseline, and the M&V plan.⁴
8. Review and provide to the ESCO pertinent records, per the M&V plan, which may include utility bills (especially any rate changes that may have occurred), maintenance and operating records of pertinent equipment, and documentation of any occupancy or usage changes in affected spaces. To the extent possible, provide this to the ESCO in advance of the M&V inspection.
9. Understand both the performance of ECMs and the monitoring tests and equipment utilized by the ESCO. If the necessary facilities operating/engineering expertise is not currently available, it may be advisable for the agency to contract for third-party witness services for the annual M&V inspection, as noted above. The decisions regarding the level of oversight and review that is required and who will be responsible for specific tasks should be made in advance and communicated to all parties, including the contracting officer (CO) and the ESCO, prior to scheduling of the activities.

When there is personnel turnover in facilities staff serving as COR, it is particularly valuable for the agency to ensure that as much knowledge as practicable of the ESPC be transitioned to succeeding personnel, as well as the capacity to perform the functions outlined above. Both the ESCO and the DOE CO should be provided with written notice of changes in CO or COR assignments.

Communication with the ESCO prior to their visit is important, to determine their needs for access, for information and records, and for any required or helpful facility personnel participation in tests and monitoring (e.g., boiler operators to facilitate combustion efficiency tests).

Recommended Steps for Facilitating and Witnessing M&V Inspection and Report Development

1. Conduct meeting with agency COR/witness and ESCO personnel to review the schedule, access requirements, and tests and monitoring that the ESCO intends to perform. This will both ensure that the inspection goes smoothly and, moreover, that both parties understand both how the performance of ECMs is to be tested and also what constitutes performance that meets the terms of the contract. Any participation by agency personnel to facilitate M&V tests and monitoring, either during or after the visit (e.g., operating equipment for testing, recording or transmitting information from data loggers), should be agreed upon.
2. Provide any utility, occupancy and/or operating and maintenance data or records needed by ESCO that could not be provided in advance.
3. Escort ESCO personnel, observe tests or observation performed, record test or measurement equipment used, record results if available on site, and obtain any needed clarification of how tests are being performed. Ensure that all needed access is made available and that all agreed upon tests are performed, and record any anomalies that affect M&V (e.g., equipment not operable and available for testing). Record any observed malfunctions either of ECMs or monitoring equipment. Sign the data collection forms that record these observations (Appendix B).
4. Ensure that facility operating staff brings to the attention of the ESCO any problems they have experienced with ECM performance.
5. If the inspection is for initial post-installation M&V and/or commissioning, agency witnessing should include, for critical ECMs, confirmation that the equipment installed is what was specified, and that it was properly installed in accordance with applicable M&V and Commissioning Plans.

Recommended Post-M&V Steps

1. Follow up with any requests by ESCO for information not available at time of visit, and follow up with ESCO for any clarification that may be needed.
2. Follow up as necessary with operating personnel for any observations they may have of ESCO conduct of testing and monitoring.
3. Review ESCO's Commissioning, Post-Installation and Annual M&V reports in accordance with the outline and format included in FEMP's review guidance cited above, and prepare a written Report Review (or edit and approve the Report Review prepared by others. (For agencies that have secured the services of a DOE PF, the Report Review for Commissioning, Post-Installation M&V and the first

Annual M&V will normally be prepared by the PF and/or the FEMP M&V Contractor). This Review should include all comment/questions for the ESCO, should be delivered in a timely fashion (w/in 30 days is suggested) and should clearly and concisely specify the action or information requested of the ESCO.⁵ Completed and signed Government Witnessing forms (Appendix B) should be attached. Copies of report reviews should be provided to the ESCO, to the agency's CO for the ESPC, and to DOE's ESPC CO, who will archive it for project records. Electronic files are required for DOE documentation.

Agency COs should consider how annual M&V report submissions may coincide with their ESPC payment schedule, in the possible event that any payment reconciliation may be called for (after any dispute resolution, as specified in the ESPC, shall have been conducted). Delivery dates for M&V reports should be scheduled that facilitate linking performance to payment. The recommended dates should be defined in the DO RFP and should allow sufficient time for review, acceptance, and any necessary dispute resolution.

Agencies may commission additional review by a third party, including the DOE PF and/or M&V contractor. Review and comment on reports should be conducted in a timely fashion, payments should not be delayed for issues that do not have a material impact on savings, and any payments withheld should be proportional to the perceived savings discrepancy or performance shortfall. Any dispute between agency and ESCO must be resolved in a manner consistent with the dispute resolution language in the M&V plan, the IDIQ and the DO RFP. Suggested language for contractor report submission, government review, and payment procedures is included in Appendix C.

Notes

1. Note, for example, GAO Study of ESPC, *GAO-05-340 Energy Savings*:

p. 5 "... payments on the contracts are conditioned on the savings guaranteed in the contracts being verified."
p. 10 "[After] acceptance payments to the company must be supported by regular measurement and verification reviews."
p. 30 "... we could not determine the status of the payments for either the [Agency 1] or the [Agency 2] projects in these audits because the audit documentation did not indicate whether payments were made despite the potential savings shortfalls."

2. See, for example, *Reviewing Post-Installation and Annual Reports...*, p. 4., Step 3:

"Principal review efforts should be focused on the measures providing the largest portion of the cost savings for the project. This strategy of reviewing the principal cost saving measures first will help the reviewer spend the smallest amount of time while maximizing the value of the review, and is especially helpful when review time is limited. Complete a detailed review of each ECM if possible."

Consideration may also be given to how often measurements that are repeated frequently need to be witnessed. For projects using M&V Option A, adequate witnessing of the Post-Installation

measurements — conducted only once following installation — is especially critical. Subsequent activities may be limited to inspections to verify “potential to perform.”

3. It should be noted that these witnessing guidelines do not specify the minimum requirements for inspections or other M&V activities; these are described in the M&V Plan. Clarification of the issues related to the M&V plan should be done before M&V activities are scheduled where possible.

4. See, for example, *Reviewing Post-Installation and Annual Reports...*, p 4., Step 2: “Generally, the entire Delivery Order, the Post-Installation Report, and previous Annual Reports are required to adequately review an Annual Report. At a minimum for any ESPC project report review, the M&V plan, the final cost schedules, any contract modifications, and the Post-Installation Report (for review of Annual Reports) should be on hand. Missing documentation can cause confusion and lead to incorrect conclusions.”

5. FEMP’s “Reviewing Performance Reports...” guidance contains checklists that are recommended for use in reviewing an ESCO’s M&V report. These recommended checklists do not themselves constitute a Report Review. Rather, they should be used as a tool to ascertain that the M&V report contains all required information, and when completed used as an annotated outline to guide a narrative Report Review that clearly and concisely specifies perceived deficiencies and the action or information requested of the ESCO to remedy those deficiencies.

Appendix A: Graded Approach to Government Oversight and Review of M&V Activities

The purpose of government oversight and review of M&V activities is to:

- Verify that all M&V activities are conducted in accordance with the M&V plan,
- Confirm that the reported results of inspections and measurements are accurate and represent actual operation of the equipment or systems involved, and
- Ensure that M&V activities are properly documented.

Oversight and review of M&V activities is a part of the process to review and approval process for M&V deliverables, encompassing the on-site inspections, spot measurements, short-term monitoring, and performance tests described in the M&V Plan.

The resources invested by the government in oversight and review of M&V activities will vary between projects, based on the magnitude of the savings, the complexity of the ECM, and the resources available.

The following sections describe a graded approach to oversight and review of M&V activities, describing the minimum requirements that should be applied to all projects, as well as more rigorous methods that should be implemented where resources permit. This guideline does not specify the minimum requirements for inspections or other M&V activities; these are described in the M&V Plan. Clarification of the issues related to the M&V plan should be done before M&V activities are scheduled where possible.

The requirements for personnel involved in oversight and review of M&V activities are also addressed. Given the wide range of technologies implemented, and the skills and experience needed to review a particular project, it is unlikely that a single individual will have all of the qualifications necessary to provide proper oversight and review.

By providing three levels of rigor and differentiating between the qualifications needed to witness M&V activities and the qualifications needed to assess compliance with the M&V plan and the validity of the measurements, it is expected that Agencies will be able to apply resources efficiently to minimize the cost of oversight while providing adequate oversight.

The decision regarding the level of oversight and review that is required and who will be responsible for specific tasks should be made in advance and communicated to all parties, including the CO and the ESCO, prior to scheduling of the activities.

Level 1 - Minimum Requirements

At a minimum, a qualified government representative should:

- Review the inspection and/or measurement plan prior to the site visit
- Provide comments or request for clarification to the ESCO prior to the site visit

- Review the inspection and/or measurement data collection forms to confirm that all of the required tasks were performed
- Sign data collection forms acknowledging that the ESCO was on-site to conduct M&V activities on a particular day or time
- Confirm that the results reported on the inspection and measurement data collection forms are consistent with the expected operation

Level 2 - Recommended Practices

In addition to the minimum requirements described above, it is recommended that a qualified government representative should:

- Review calibration requirements for portable instrumentation and verify that they are in compliance with the M&V plan
- Conduct spot checks of ESCO M&V activities while they are on site, and verify that the inspection, measurements, monitoring, and performance tests are being conducted in accordance with the M&V plan
- Sign the data collection forms used for only activities witnessed
- Sign data collection forms acknowledging that the ESCO was on-site to conduct M&V activities on a particular day or time
- Review the results to verify that they are consistent with your understanding of the expected results at the observed operating conditions

Level 3 – Best Practices

The following summarizes the best practices for oversight and review of M&V activities. In addition to the requirements shown above, this includes:

- Accompany ESCO personnel during the site visit data collection, witness the inspection, measurements, and performance tests, and during installation and removal of monitoring equipment
- Review the results as they are recorded on the data collection forms to verify that they are consistent with your understanding of the results, and are consistent with the expected operation of the equipment being monitored
- Sign the data collection forms used for the site visit
- Sign data collection forms acknowledging that the ESCO was on-site to conduct M&V activities on a particular day or time

Qualifications of Government Representatives

The specific requirements for the government representatives are described below based on the following areas of responsibility

- Coordinating oversight of M&V activities, reviewing results and reporting of findings to CO and ESCO.
- Inspection
- Measurement, Monitoring and Performance Testing

The minimum requirements for the lead government representative, who is responsible for coordinating oversight of M&V activities, reviewing results and reporting of findings to CO and ESCO (Best Practices), are:

- Certification as a CEM, CMVP or CBCXP, or registration as a professional engineer in the appropriate discipline.
- A minimum of 5 years of experience in the analysis, design, commissioning or measurement and verification of energy efficiency projects
- Familiar with both the site and the details of the proposed ESPC project.
- Experience with the specific technologies to be implemented.
- Familiar with the safety training requirements and site specific safety requirements for activities to be conducted.

The minimum requirements for the government representative for (Minimum Requirements) inspections are as follows:

- A minimum of 2 years of experience in the operation, maintenance and/or engineering of the equipment and/or systems being inspected,
- Familiar with the scope of the specific ECMs to be inspected,
- Familiar with the specific equipment and systems to be inspected,
- Has received all necessary safety training required to complete inspection activities.

The minimum requirements for the government representative for (Recommended Practices) measurements, monitoring, and/or performance tests are the same as inspections, with the following additional requirements:

- Working knowledge of the instrumentation to be used,
- Understanding of the measurement, monitoring, and/or performance tests to be performed based on the M&V Plan.
- Has received all necessary safety training required to complete measurement, monitoring, and/or performance test activities

Schedule

The timeframe for review and acceptance is based on the schedule of M&V activities included in the M&V Plan. The Agency is obligated to perform its oversight and review in the timeframes described in the M&V plan. If the agency is unable to complete oversight and review within the timeframes specified, the ESCO may incur significant additional costs which the Agency may be liable for if it is unable to accept the project or process payments to the ESCO in a timely fashion.

Appendix B: Suggested format for recording Government Witnessing of ECMs**Government Witnessing data, by ECM**

ECM Name /#: _____

Date measured: _____

Equipment Used _____ Calibration Date: _____

Location of Measurement (Room, building, site) _____

Contractor Staff: _____

Gov't Staff: _____ Title: _____

Description of what was measured _____

Data for ECM Name /#: _____

Location of measurement: _ (Center of room, pipe surface, inside duct, etc. _____

Baseline Data: (Pre-Install) _____

Expected Data: (Post- Install) _____

As Found Data _____

Other observations _____

[Repeat as necessary to encompass selected ECMs to be witnessed]

Government Witnessing Signatures

This document accurately represents the M&V activities I have witnessed, for the ECMs indicated and at the dates indicated.

Name: _____

Title: _____

Signature: _____

Date: _____

Name: _____

Title: _____

Signature: _____

Date: _____

**Appendix C:
Guidelines, Checklist, and Contract Clauses for Government Acceptance
of DOE Super-ESPC Projects
(Phase 4 — Document 2 in Agency Project Binder)**

1. ECM Installation: All ECMs are installed in accordance with plans, specifications, standards, and other contract documents (sometimes by the Contractor, often by a subcontractor and always over a period of months).

2. Inspection, start-up, testing and commissioning. All ECMs are inspected, brought on line, tested, and commissioned *interactively* with all related Government-owned or Contractor-installed ECMs. Again, the ECMs should be operating in accordance with the design, plans, specifications, standards and other contract documents and manufacturer's recommendations. Individual ECMs may go through start-up and testing, but all interrelated ECMs must be installed prior to commissioning. The Contractor should be involved in the final inspection and commissioning process along with their subcontractors. The agency technical representative (TR) should accompany the Contractor on these inspections and document in writing that he has witnessed the inspections.

Note: An agency may have more rigorous test and acceptance procedures defined in the Delivery Order.

3. Punch list generation. A punch list is generated during inspection to document items needing fixing or deficiencies, and punch list items are corrected.

Note: Individual ECMs may be signed off on by the TR as they are installed, but "sign-off" by a TR doesn't constitute official Government acceptance of the ECM or the project. It acknowledges completion of the installation of that ECM and perhaps activates the warranty. Agencies should use due diligence prior to signing off on individual ECMs as the 30-day performance period usually hasn't yet occurred.

4. 30-day Performance Period. Upon completion of the above items for the last installed ECM, the Contractor writes a letter to the ACO asking for the 30-day performance period to begin (assuming all significant punch list items have been corrected). Other discrepancies may appear during this period. The Contractor should have them all corrected by the end of the 30-day period. If the discrepancy has the potential to reappear or if another 30-day period is warranted because of the criticality of the ECM, the ACO has the right to ask for continuation of the performance period.

Note: Even if individual ECMs have been operating successfully after installation for several weeks or months, all ECMs are included in this "official" 30-day performance period.

5. Final submittals.

Operation and maintenance manuals are provided.

Operation and maintenance training is provided.

Spare parts are provided or spare parts lists are provided.

As-built drawings are provided.

Commissioning Report is reviewed and approved.
 Post Installation M&V Report is reviewed and approved.
 Utility rebate inspections and paperwork is approved and submitted.

Note: All this can happen during the 30-day performance period or as individual ECMs are installed. Punch list items that do not relate to system and equipment performance are often handled during this period also.

6. Measurement and Verification. M&V post-installation measurements are taken and M&V protocols are in place; in most cases a post installation M&V report is generated (all based on the M&V plan submitted).

Note: The IDIQ contract requires the post-installation M&V report to be submitted prior to acceptance of the project. If the delivery order does not require it prior to acceptance, it should come in within 30-60 days after project completion.

7. Agreement on modifications/change orders. Frequently during construction, there are changes that occur to the work scope. Some are Government-requested changes and some are Contractor-generated. It must first be determined whether the “change” is already within the scope of what the Contractor covered in their proposal. Any changes to the DO amount, savings, payment schedule, etc., must be agreed upon and documented in a Modification to the DO. The Modification should be ready by the time of final acceptance.

Note: Both the Government and the Contractor should track all changes made during DO implementation. It is most feasible to do one modification to the DO for all changes made just prior to accepting the project. It is important that the Contractor and government come to agreement quickly so that payments are not unduly delayed.

8. Final contractor/government inspection. One final walk-through should be conducted with the Government representative. The ECMs should be fully operational, without bugs, and all other items should have been provided by now. The Acceptance Checklist (see below) is noted with dates for each item, and signed off by the TR and forwarded to the ACO.

9. Government Acceptance. The ACO signs the checklist, writes a letter to the Contractor accepting the project, enclosing a copy of the checklist, and stating that payments can begin. One copy of the checklist is sent to DOE with a copy of the letter.

Note 1: It is an agency decision as to when they feel the project can be accepted. The process above outlines an approach consistent with the IDIQ contract with the project acceptance for all ECMs occurring at one point and invoicing starting after complete project acceptance. At agency discretion, the ACO may accept a project even though minor punch list items or some services are not yet completed. The acceptance letter would document the outstanding items with a due date for completion.

Note 2: Partial acceptance(s) of a project may be warranted or desirable, which would allow for staggered invoices through the construction period. For example, projects with one or two ECMs with very long construction periods and others having shorter construction periods, projects with different sites involved, or projects with exceptionally long construction periods (over 18 months) may benefit from partial payments in order to reduce interest expense. Any alternative acceptance method must be documented and agreed to in the proposal and the

awarded DO in Paragraph G.3 as it is a deviation from IDIQ language and affects the payment schedule, construction financing, and interest payments.

10. Invoicing. The Contractor may invoice starting with the month after receiving Government acceptance. For instance, if a project is accepted on May 31, the first invoice period can be June 1-30 and the invoice is sent around June 30 for payment around July 30.

Note: Agencies have sometimes agreed to provide payments on a quarterly or annual basis, rather than monthly. This can reduce administration burden of making payments and may reduce the amount of interest paid. Any arrangement other than monthly invoices must be agreed upon must be documented in Paragraph G.3.1 of the RFP/DO.

Checklist for Government Acceptance of Completed Project

- _____ All ECMs have been installed.
- _____ All ECMS have been through inspection, start-up, testing, and interactive commissioning.
- _____ Commissioning Report reviewed and approved.
- _____ All discrepancies noted have been corrected.
- _____ Appropriate training on operations and maintenance (O&M) was conducted for each ECM
- _____ O&M manuals and procedures have been provided.
- _____ Recommended spare parts lists and spares have been provided.
- _____ As-built drawings have been received and approved.
- _____ Government witnessing of M&V activities documentation completed.
- _____ Post-installation M&V report received and approved.
- _____ Utility rebate inspections and paperwork approved and submitted.
- _____ Manufacturer warranty and registration paperwork submitted.
- _____ All ECMs have performed properly for 30 days as of _____.
- _____ Government final inspection and acceptance is confirmed as of _____.

Government Technical Rep _____ Date _____ Agency Contracting Officer _____ Date _____

Super ESPC Contract Clauses Pertaining to Acceptance and Payment

C.4.2 M&V Submittals During Delivery Order Development and Post Award

- (c) The Contractor shall prepare and submit a Post-Installation Report to the Government (**Attachment 2, Item 15**) pursuant to the Post-Installation Reporting Requirements and Submittals (**Attachment 7**) verifying that installed ECMs demonstrate the guaranteed annual energy, energy-related, and water cost savings specified in the awarded Delivery Order. The approval by the Government of this Post-Installation Report shall constitute Government Acceptance of the Contractor's energy savings performance guarantee.

C.5.4 ECM Commissioning

C.5.4.3 ECM Commissioning Report - The Contractor shall submit a Commissioning Report documenting the ECM's affect upon facility performance requirements in accordance with the Commissioning Plan (**Attachment 2, Item 14**). The approval of this ECM Commissioning Report by the Government shall constitute Acceptance of the Contractor's achievement of facility performance requirements.

SECTION E INSPECTION AND ACCEPTANCE

E.2 ACCEPTANCE

- E.2.1** Execution by the Agency Contracting Officer of a Delivery Order under this Contract constitutes acceptance of the Final Proposal as offered by the Contractor.
- E.2.2** Government Acceptance, for purpose of payment under Section G.3 occurs when the following approvals are completed: approval by the Agency Contracting Officer of the Contractors Post-Installation Report (**Section C.4.2(c)**) and the approval by the Agency Contracting Officer of Contractor's ECM Commissioning Report (**Section C.5.4.3**), and the project inspection and acceptance is obtained pursuant to **Section E.4**.

E.3 FAR 52.246-12 INSPECTION OF CONSTRUCTION - FIXED PRICE (AUG 1996)

- (a) Definition.
- "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.
- (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records

and make them available to the Government. All work shall be conducted under the general direction of the Agency Contracting Officer for the specific project, and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

- (c) Government inspections and tests are for the sole benefit of the Government and do not:
 - 1. Relieve the Contractor of responsibility for providing adequate quality control measures;
 - 2. Relieve the Contractor of responsibility for damage to or loss of the material before acceptance;
 - 3. Constitute or imply acceptance; or
 - 4. Affect the continuing rights of the Government after acceptance of the completed work under paragraph (i) below.
- (d) The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the Agency Contracting Officer's written authorization.
- (e) The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Agency Contracting Officer. The Government may charge to the contractor any additional cost of inspection or test when work is not ready at the time specified by the contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Any special and performance tests shall be performed as described in the contract.
- (f) The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The contractor shall promptly segregate and remove rejected material from the premises.
- (g) If the Contractor does not promptly replace or correct rejected work, the Government may:
 - 1. by contract or otherwise, replace or correct the work and charge the cost to the contractor; or

2. terminate for default the Contractor's right to proceed.
- (h) If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or non-conforming in any material respect due to the fault of the contractor or its subcontractors, the contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the Agency Contracting Officer shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
 - (i) Unless otherwise specified in the contract or any delivery order, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or delivery order, or that portion of the work the Agency Contracting Officer determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

E.4 INSPECTION AND ACCEPTANCE OF INSTALLED ECMs

Each delivery order will include specific inspection and acceptance criteria pertinent to the delivery order project. The following general inspection and acceptance requirements shall apply to each delivery order, unless otherwise indicated in the delivery order:

- (a) The Contractor shall arrange for the inspection of construction work and construction oversight to verify that the energy efficiency equipment and/or system modifications are properly supplied as designed and specified, and installed in accordance with the approved installation plan, all applicable codes and standards, the delivery order specifications and in a manner that will provide the intended long-term function, energy savings, and performance of the equipment. (Reference the requirement for Building Commissioning in paragraph C.5.4.) Any monitoring and verification of equipment and systems installed shall be consistent with requirements defined in the approved M&V plan. All start-up and testing shall be conducted in the presence of the Agency COR.
- (b) The Agency Contracting Officer will accept the project installation in writing, in accordance with Section G.3.(a). upon satisfactory completion of the required 30-day test period, and upon receipt of all other required deliverables.
- (c) Each delivery order may include additional agency-specific or site-specific inspection and acceptance requirements, and timeframes for completion. The Contractor shall review each delivery order to determine the recommended applicable inspection and acceptance requirements for that delivery order.

E.5 FAR 52.246-4 INSPECTION OF SERVICES - FIXED-PRICE (AUG 1996)

(a) Definitions.

"Services," as used in this clause, includes services performed, workmanship, and material furnished or utilized in the performance of services.

(b) The Contractor shall provide and maintain an inspection system acceptable to the Government covering the services under this contract. Complete records of all inspection work performed by the Contractor shall be maintained and made available to the Government during contract performance and for as long afterwards as the contract requires.

(c) The Government has the right to inspect and test all services called for by the contract, to the extent practicable at all times and places during the term of the contract. The Government shall perform inspections and tests in a manner that will not unduly delay the work.

(d) If the Government performs inspections or tests on the premises of the Contractor or a subcontractor, the Contractor shall furnish, and shall require subcontractors to furnish, at no increase in contract price, all reasonable facilities and assistance for the safe and convenient performance of these duties.

(e) If any of the services do not conform with contract requirements, the Government may require the contractor to perform the services again in conformity with contract requirements, at no increase in contract amount. When the defects in services cannot be corrected by reperformance, the Government may:

1. require the Contractor to take necessary action to ensure that future performance conforms to contract requirements; and
2. reduce the contract price to reflect the reduced value of the services performed.

(f) If the Contractor fails to promptly perform the services again or to take the necessary action to ensure future performance in conformity with contract requirements, the Government may:

1. by contract or otherwise, perform the services and charge to the contractor any cost incurred by the Government that is directly related to the performance of such service; or
2. terminate the contract for default.

E.6 FAR 52.246-20 WARRANTY OF SERVICE (APR 1984)

(a) Definitions:

"Acceptance," as used in this clause, means the act of an authorized representative of the Government by which the Government assumes for itself, or as an agent of

another, or approves specific services, as partial or complete performance of the contract delivery order.

"Correction," as used in this clause, means the elimination of a defect.

- (b) Notwithstanding inspection and acceptance by the Government or any provision concerning the conclusiveness thereof, the Contractor warrants that all services performed under this contract and its deliver orders will, at the time of acceptance, be free from defects in workmanship and conform to the requirements of this contract. The Agency Contracting Officer shall give written notice of any defect or nonconformance to the Contractor within 30 days from the date the defect or non-conformance is detected by the Government. This notice shall state either (1) the Contractor shall correct or reperform any defective or nonconforming services, or (2) that the Government does not require correction or reperformance.
- (c) If the Contractor is required to correct or reperform, it shall be at no cost to the Government, and any services corrected or reperformed by the Contractor shall be subject to this clause to the same extent as work initially performed. If the Contractor fails or refuses to correct or reperform, the Agency Contracting Officer may, by contract or otherwise, correct or replace with similar services and charge to the Contractor the cost occasioned to the Government thereby, or make an equitable adjustment in the contract price.
- (d) If the Government does not require correction or reperformance, the Agency Contracting Officer shall make an equitable adjustment in the contract price.

G.3 INVOICE SUBMITTALS FOR DELIVERY ORDER PROJECTS

- (a) Payments will commence when all ECMs have been installed and Acceptance by the Government is obtained as required under Section E.
- (b) The frequency of payments from the government to the Contractor shall be as negotiated and specified in the Delivery Order.

G.4 PAYMENT TO THE GOVERNMENT FOR ANNUAL GUARANTEED SAVINGS SHORTFALL

- (a) If the Contractor fails to meet the annual performance requirement as verified by the Measurement and Verification documents, the Government shall adjust the payment schedule to recover the Government's overpayments in the previous year and to reflect the lower performance level into the current year.
- (b) When the ECM performance level is restored, the Government will adjust the Contractor payment schedule accordingly.

Appendix D: Suggested Language in DO RFP requiring Agency Witnessing of Post-Installation and Annual M&V Activities/Reports

Please note: Instructions and text to be replaced by the ordering agency appears in italics. Suggested additions to the DO RFP are introduced as such, in bold italics.

G.1 CONTRACT ADMINISTRATION FOR THE GOVERNMENT

(b) ADMINISTRATION OF DELIVERY ORDERS: *Specify the Agency Contracting Officer (CO) and Contracting Officer's Representative (COR), and their contact information, as follows:*

1. Agency Contracting Officer: The Contracting Officer for this delivery order is *specify*, telephone number: (XXX) XXX-XXXX; fax number: (XXX) XXX-XXXX; e-mail: *specify*. The contractor shall use the Agency Contracting officer as the focal point for all matters regarding this delivery order except technical matters.
2. Agency Contracting Officer's Representative : The delivery order COR for this project is *specify*, telephone number: (XXX) XXX-XXXX, fax number: (XXX) XXX-XXXX, e-mail: *specify*. The contractor shall use the Agency COR as the focal point for all technical matters related to this delivery order only.

Suggested additional requirements:

- a. Agency Delivery Order COR contract administration requirements include:
 - Provide technical oversight to the development and implementation of the M&V Plan and Commissioning Plans
 - Prior to ECM Installation, witness measurements and reviewing calculations, records (e.g., utility bills) and other elements of baseline to confirm accuracy and to confirm consistency with the approved M&V plan.
 - During ECM Installation, witness ECM testing identified in M&V and Commissioning plans based on ESCO advance notification of scheduled system testing
 - During post-installation 30-day pre-acceptance test period witness ECM testing and performance measurements conducted by contractor
 - Review Post-Installation M&V and Commissioning Reports to confirm installed ECMs are installed and perform as specified; complete Report Review within (30) days of receipt.
 - Witness scheduled inspections conducted by contractor during the performance period to confirm ECM performance.
 - Review Annual M&V report; complete Report Review within (30) days of receipt.

G.2 INVOICING INSTRUCTIONS

Specify all invoicing instructions, to include invoice format, invoice contents and any attachments or enclosures, submission and addressing instructions, etc.

G.3 INVOICE SUBMITTALS FOR DELIVERY ORDER PROJECTS

Specify in (a) when the contractor may commence submission of invoices, if different than what is specified in the contract at G.3 (a).

Suggested additional language:

(b) The Contractor shall prepare and submit an Annual Measurement and Verification Report to the Government including data and calculations that demonstrate that continued ECM performance achieves the guaranteed annual energy, energy-related, and water cost savings as required by the Delivery Order. The Contractor shall submit the Annual Report within thirty (30) days of completion of Performance Year and the Government shall complete its review within thirty (30) days of receipt of the Report. Any review comments will be incorporated by the Contractor and a revised report, if appropriate, will be submitted within fifteen (15) calendar days of receipt of the review comments. If the government does not generate comments on the report within thirty days from receipt, then the report will be assumed to be approved by the government.

(c) The Contractor may submit invoices for payment with its submission of the Post-Installation Report and Commissioning Report and of its Annual Measurement and Verification Reports in subsequent years. After Government review of those reports, the Contracting Officer will assess the need for adjustments, and submit a statement of required adjustments together with the Government report reviews to the Contractor. The Contractor may submit a revised invoice with its submission of a revised report. Any dispute between the Contractor and the Government must be resolved in a manner consistent with the dispute resolution language in the M&V plan, the IDIQ and this DO RFP.

(d) The Government will make payments to the Contractor by electronic funds transfer not later than five (5) business days after receipt of an acceptable invoice from the Contractor. Any defects in invoices which are discovered after acceptance and payment will be corrected on subsequent invoices. If the Government discovers such defects, the Contracting officer will notify the Contractor.

G.4 PAYMENT TO THE GOVERNMENT FOR ANNUAL COST SAVINGS SHORTFALL

If the provisions included in the contract at G.4 are unacceptable to the ordering agency, or require revision, specify the revised procedure for payment to the Government for annual cost savings shortfalls.